ABC Call Volume Trend Analysis

Project Description:

Customer Experience (CX) Analytics for Inbound Calling Team

Overview:

This project focuses on analysing the performance of a company's inbound calling team over 23 days. We will look at details like how long customers wait before speaking to an agent, the length of the calls, and the outcome of the calls (whether they were abandoned, answered, or transferred). Our goal is to find useful insights to help the team handle calls more efficiently and plan staffing better. By improving these areas, we aim to enhance the overall customer experience and satisfaction. This analysis will involve calculating average call durations, understanding call volume trends, and making staffing recommendations.

Assumptions:

- An agent works 6 days a week.

- Each agent takes 4 unplanned leaves per month.

- An agent works 9 hours a day, with 1.5 hours for breaks.

- Agents spend 60% of their working hours on calls.

- A month has 30 days.

Objective:

The goal is to analyse call trends, improve agent efficiency, and enhance the overall customer experience by ensuring timely response to customer calls.

Tech-Stack Used:

MS Excel for analysis of data and visual representation of dataset. Adobe PDF for Presenting.

Approach and Insights:

Understanding Dataset:

The dataset covers 23 days and includes:

- Agent's name and ID

- Queue time (how long a customer waited)

- Call time and duration

- Call status (answered, abandoned, transferred)

Dataset has 117989 rows and 13 columns.

Data Cleaning:

- Filled blank values in wrapped by with abandon Call as it’s corresponding row data seems like the call was abandoned and no executive attended it.

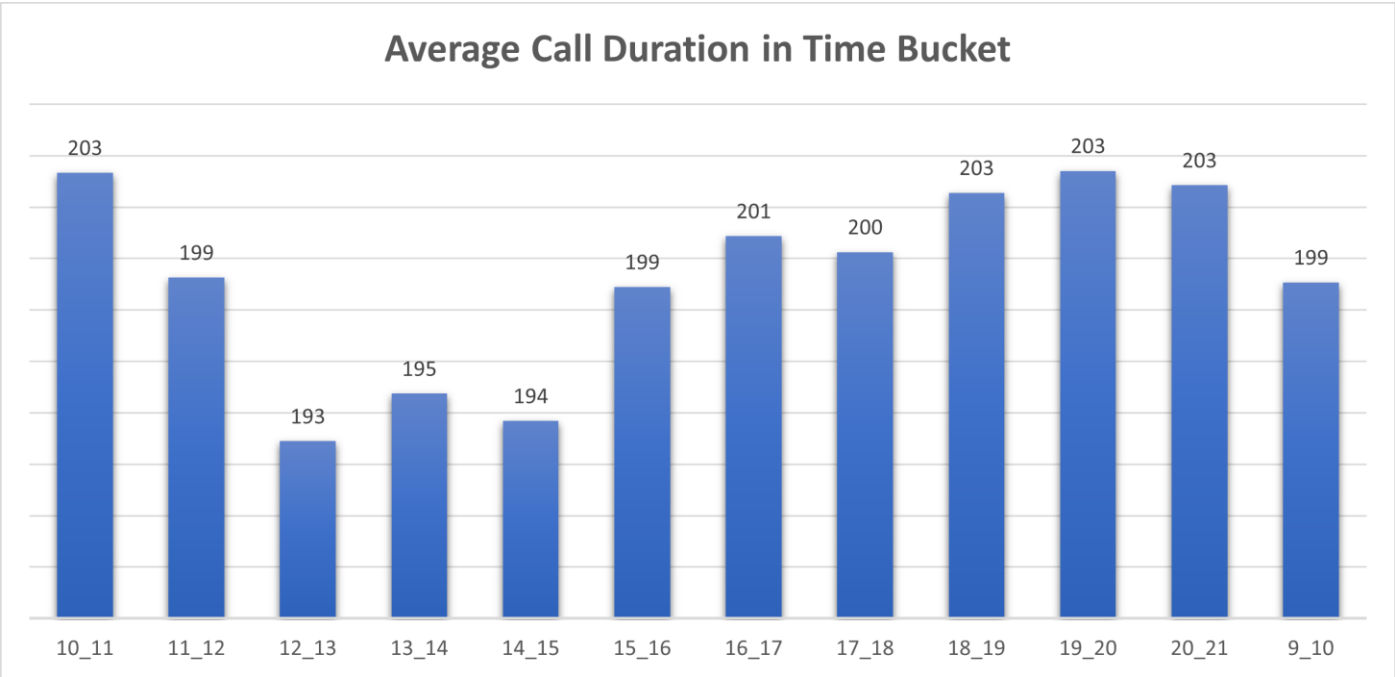
Analysis and Insights:

1. **Average Call Duration:** Determine the average duration of all incoming calls received by agents. This should be calculated for each time bucket.

   Your Task: What is the average duration of calls for each time bucket?

   - Used a Pivot table to find the average duration of calls where the rows of pivot table are time buckets and values are Average of Call duration in Seconds.
   - Created a filter to filter out only answered calls.
   - The total average call duration for incoming calls received by the agent is 198.62 seconds.

Call_Status	answered
Time Bucket	Average of Call_Seconds (s)
10_11	203
11_12	199
12_13	193
13_14	195
14_15	194
15_16	199
16_17	201
17_18	200
18_19	203
19_20	203
20_21	203
9_10	199
Grand Total	199

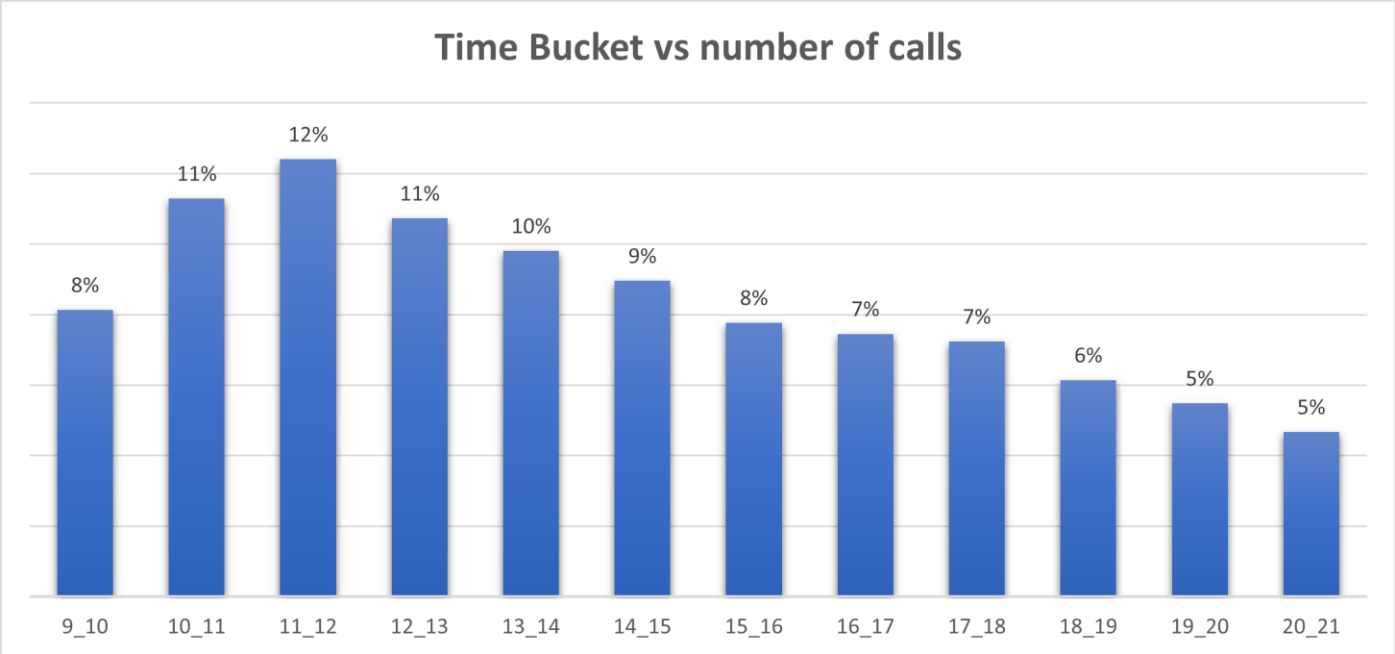


2. **Call Volume Analysis:** Visualize the total number of calls received. This should be represented as a graph or chart showing the number of calls against time. Time should be represented in buckets (e.g., 1-2, 2-3, etc.).

   Your Task: Can you create a chart or graph that shows the number of calls received in each time bucket?

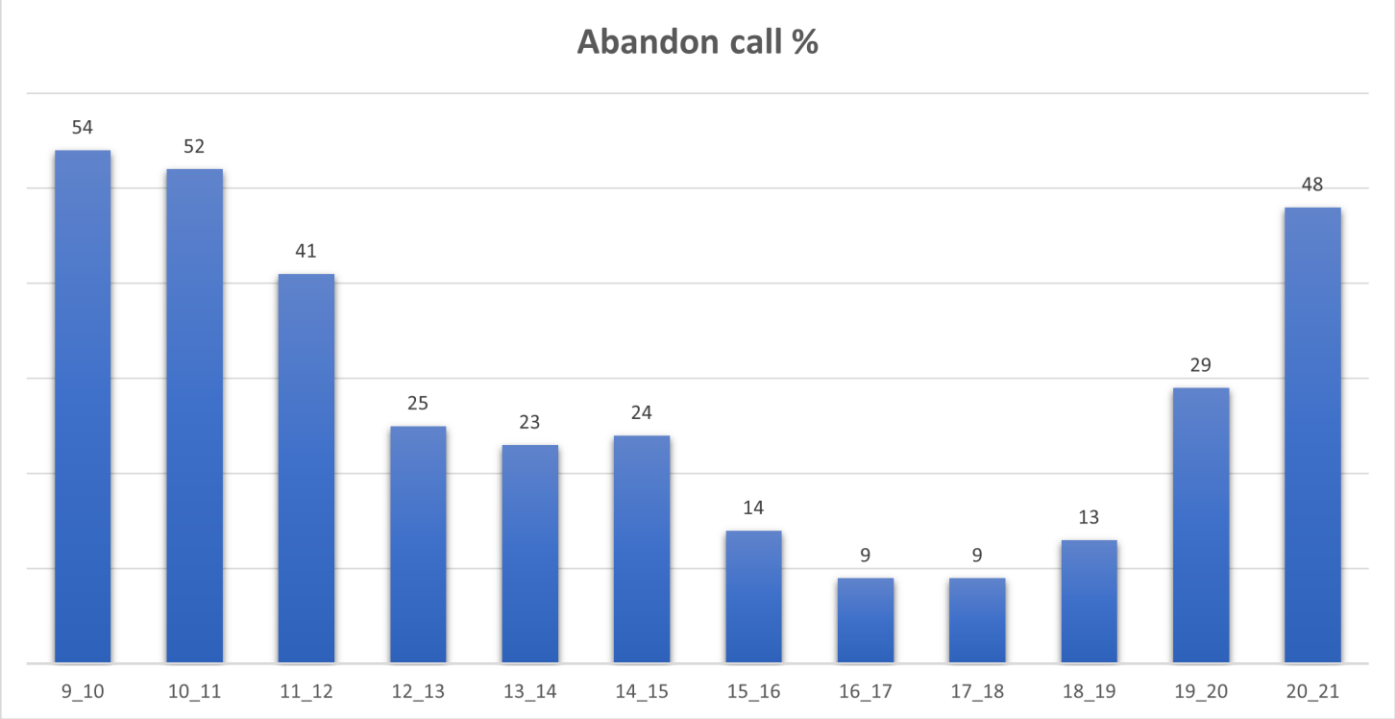
   - Used a Pivot table to find the Call Volume the rows of pivot table are time buckets and values are Count of Customer Phone no.

Call_Status	All
Row Labels	**Count of Customer_Phone_No**
10_11	13313
11_12	14626
12_13	12652
13_14	11561
14_15	10561
15_16	9159
16_17	8788
17_18	8534
18_19	7238
19_20	6463
20_21	5505
9_10	9588
Grand Total	**117988**

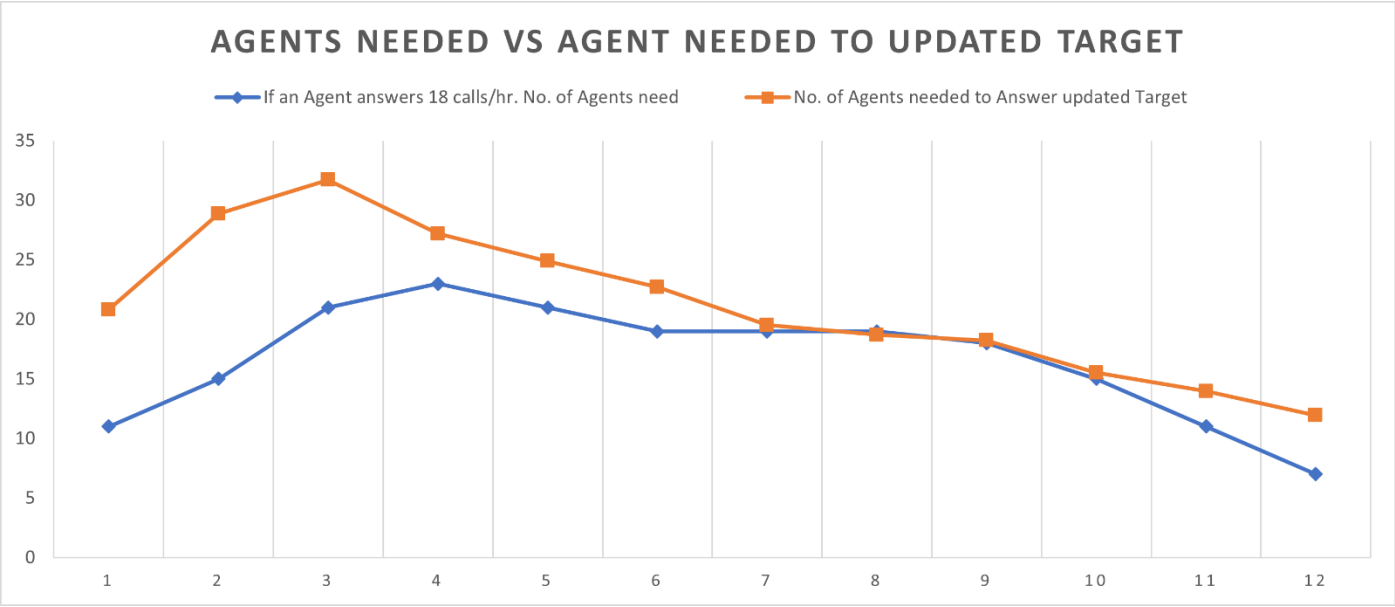


3. **Manpower Planning:** The current rate of abandoned calls is approximately 30%. Propose a plan for manpower allocation during each time bucket (from 9 am to 9 pm) to reduce the abandon rate to 10%. In other words, you need to calculate the minimum number of agents required in each time bucket to ensure that at least 90 out of 100 calls are answered.

   Your Task: What is the minimum number of agents required in each time bucket to reduce the abandon rate to 10%?



Highest Abandoned calls are 9-12 and 20-21.



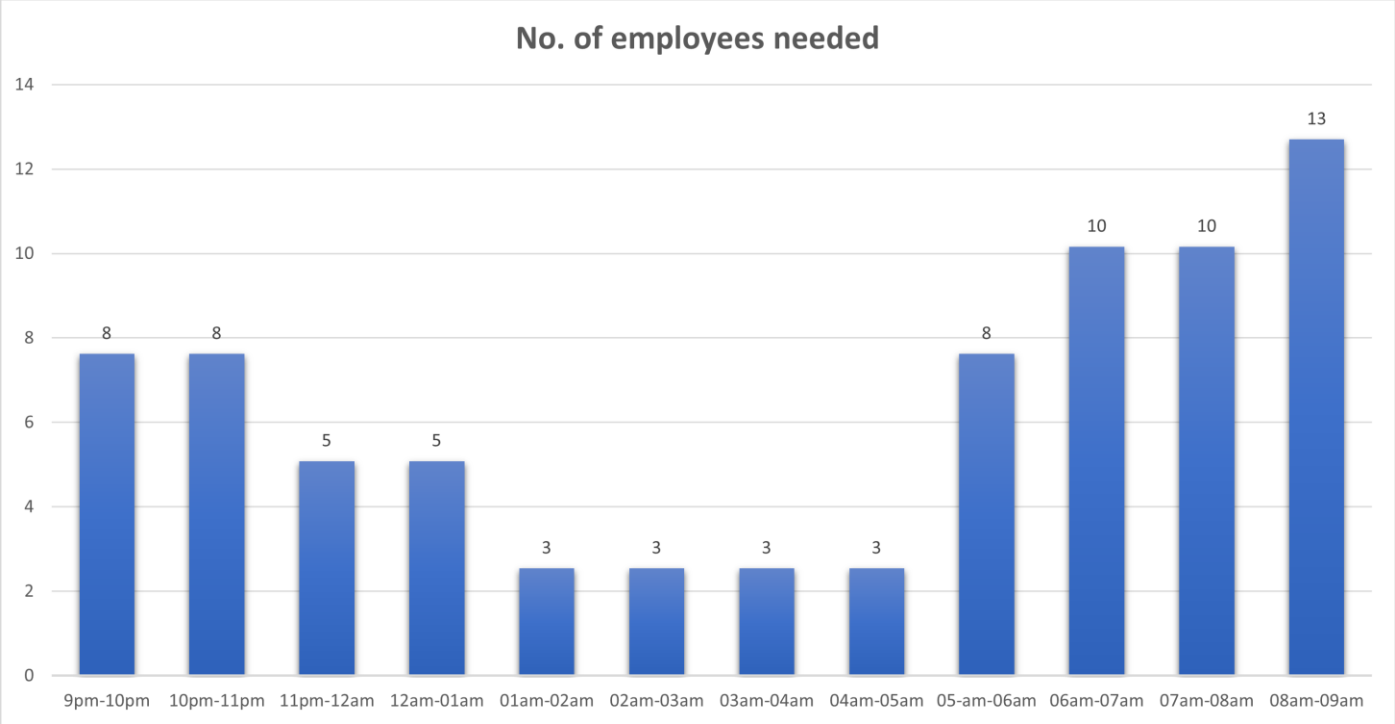
Agents needed are higher for updated target where there are very few agents when they answer 18 calls per hour.

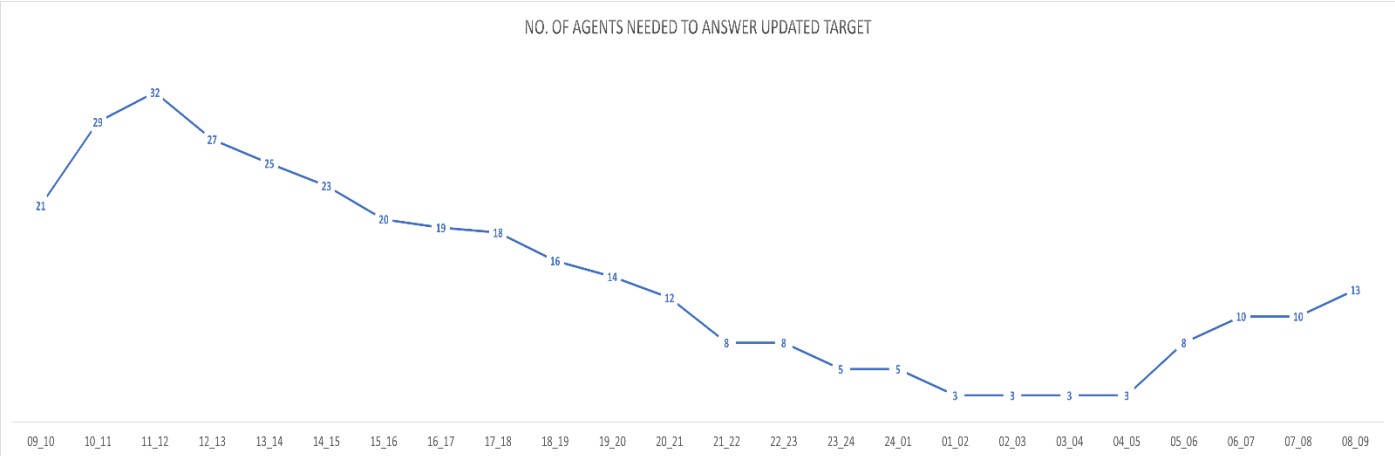
4. **Night Shift Manpower Planning:** Customers also call ABC Insurance Company at night but don't get an answer because there are no agents available. This creates a poor customer experience. Assume that for every 100 calls that customers make between 9 am and 9 pm, they also make 30 calls at night between 9 pm and 9 am. The distribution of these 30 calls is as follows:

Your Task: Propose a manpower plan for each time bucket throughout the day, keeping the maximum abandon rate at 10%.

Assumptions: An agent works for 6 days a week; On average, each agent takes 4 unplanned leaves per month; An agent's total working hours are 9 hours, out of which 1.5 hours are spent on lunch and snacks in the office. On average, an agent spends 60% of their total actual working hours (i.e., 60% of 7.5 hours) on calls with customers/users. The total number of days in a month is 30.

Distribution of 30 calls coming in night for every 100 calls coming in between 9am - 9pm (i.e. 12 hrs slot)											
9pm- 10pm	10pm - 11pm	11pm- 12am	12am- 1am	1am - 2am	2am - 3am	3am - 4am	4am - 5am	5am - 6am	6am - 7am	7am - 8am	8am - 9am
3	3	2	2	1	1	1	1	3	4	4	5





Proposal of Man Power Night Shift:

We need more agents during 5am – 9am and 9pm to 10pm.

The line graph above also shows the same but its railway time where more agents are required from 20 – 23 and 05 – 09 for updated target.

Note: the line chart contains 24hrs or data to meet updated target.

Insights:

- Average time duration of a call is 199 seconds.
- An agent on an average can handle 81 calls per day.
- Consistent average call durations across all time buckets suggest stable operations, uniform service quality, efficient call handling, consistent customer behaviour patterns.
- The maximum number of agents required is in the morning hours from 9 A.M to 1 P.M and the least number of agents required is at night hours from 11 P.M to 5 A.M.
- At present, no agents are available during the night shifts. Therefore, the company should either employ more agents for night shifts or consider changing the shifts of some agents.

Result

This project has aided me in understanding the importance of data analytics in customer experience analysis by providing valuable insights necessary for data-driven decision-making. Through this project, I gained insights into several aspects, including call abandonment rates, call duration distribution, call volume, agent allocation, and strategies for devising a workforce plan aimed at reducing abandoned calls.